

09/287,579

Response to Office Action dated February 2, 2005

REMARKS

Applicants thank the Examiner for the careful attention accorded this Application and respectfully requests reconsideration in view of the Amendments set forth above and the remarks below.

Claims 1-61 and 68-82 were previously canceled. Claims 62-67 and 88-89 remain pending for examination.

The Examiner has rejected claims 62 and 88 under 35 U.S.C. §103(a) as being unpatentable over US 4,749,261 (McLaughlin et al) in view of US 6,172,720 (Khan et al), US 4,131,581 (Coker) and US 6,171,663 (Hanada et al).

Applicants respectfully submit that the amended claims are not rendered obvious by the teachings of McLaughlin in view of Khan, Coker and Hanada. In particular, there is no teaching or suggestion in the references, alone or in combination, to liquid crystal material comprises a PSCT mixture including a non-reactive blend of a chiral liquid crystal and a monomer and a surfactant. The test under §103 is whether the references, taken as a whole, would suggest the invention to one of ordinary skill in the art.

Medtronic, Inc. v. Cardiac Pacemakers, Inc., 220 USPQ 97 (Fed. Cir. 1983).

Additionally, the Examiner has not pointed to any motivational statements in any of the cited art for combinations thereof. When determining the patentability of a claimed invention which combines two known elements, the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination. WMS Gaming, Inc. v. International Game Technology, 184 F.3d 1339, 1355 (Fed. Cir. 1999). When prior-art references require a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. Something in the prior art as a whole must suggest the desirability and thus the obviousness, of making the combination. Uniroyal Inc. v. Rudkin-Wiley Corp., 5 USPQ2d 1434 (Fed. Cir. 1988).

Applicants objections to the Examiner's use of McLaughlin remain as in prior responses in this file history. McLaughlin et al. discloses privacy or solar control panels based on polymer dispersed liquid crystal systems (PDLC). PDLC based systems contain substantially solid liquid crystal materials, having greater than 10% polymeric material,

Page 4 of 6

09/287,579

Response to Office Action dated February 2, 2005

often 20-80% polymer material. However, the present claims are directed to PSCT based devices, using less than 10% polymeric material.

Further, the combination of Khan with McLaughlin is not proper, since Khan is directed to PSCT material compositions. However, the present claim is directed to a PSCT composition not taught or suggested by Khan, namely include non-reactive blend of a chiral liquid crystal and a monomer, and a surfactant.

Further, Coker is directed to adhesive compositions based on polyvinyl alcohol or ethylene/vinyl alcohol. It describes a non-reactive diluents in the blend for reducing the viscosity of the overall adhesive composition. Coker, column 6, lines 58-60.

In contrast, the herein claims 62 and 88 include non-reactive blend of a chiral liquid crystal and a monomer, and a surfactant. The non-reactive blend of the chiral liquid crystal material provided to a modest switching electric field, as compared with prior PSCT systems using reactive blends. The problem being solved by using the non-reactive blend is completely different that the problem cited in Coker, i.e., to reduce viscosity. The problem being solved by the present invention of claims 62 and 87 is unique to PSCT materials, in that a polymer network must maintain cholesteric texture of the chiral component, while not hindering electrical switching operability. PSCT mixtures must have a sufficiently strong polymer network to stabilize the cholesteric texture of the mixture. However, upon application of electric fields, the orientation of the chiral molecules is switched. By using a non-reactive blend as claimed herein, this problem is addressed. As stated in the specification at page 23, second full paragraph:

"By introducing a polymer network free of mesogenic groups, the coupling between the polymer network and the non-reactive liquid crystal molecules is weaker yet strong enough to stabilize the cholesteric texture in the focal conic state, therefore a modest switching electric field is sufficient to switch all non-reactive liquid crystal molecules along the field direction."

Regarding the use of Hanada as disclosure of the surfactant, as stated by applicants in the previous response, the combination is improper. Hanada is direct to liquid crystal display elements with a transparent electrode substrate. The use of a surfactant is in the composition of a transparent electrode substrate:

"The cured polymer layer (B) obtained by the above cross-linking reaction has excellent chemical or solvent resistance, gas barrier properties and adhesivity as

09/287,579

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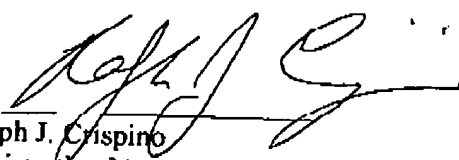
well as other properties required for a transparent electrode substrate." Hanada, column 13, lines 5-10.

Therefore, based on the above arguments, removal of the rejections of claims 62 and 88 over McLaughlin, Khan, Coker and Hanada is respectfully requested, and allowance of claims 62 and 88 is earnestly solicited.

Further, regarding the §103 rejections of: claims 63-64 over McLaughlin, Khan, Coker and Hanada as applied to claim 62 in further view of US 5,691,795 (Doane); claim 66 over McLaughlin, Khan, Coker and Hanada as applied to claim 62 in further view of US 5,667,897 (Hashemi); and claims 67 and 89 over McLaughlin, Khan, Coker and Hanada as applied to claim 62 and 88 in further view of US 6,022,547 (Hcrb), it is respectfully submitted that these claims are allowable due to their dependency on claim 62 and 88.

The amendments herein do not introduce any new matter. It is believed that the claims herein should be allowable to Applicants.

Respectfully submitted,

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